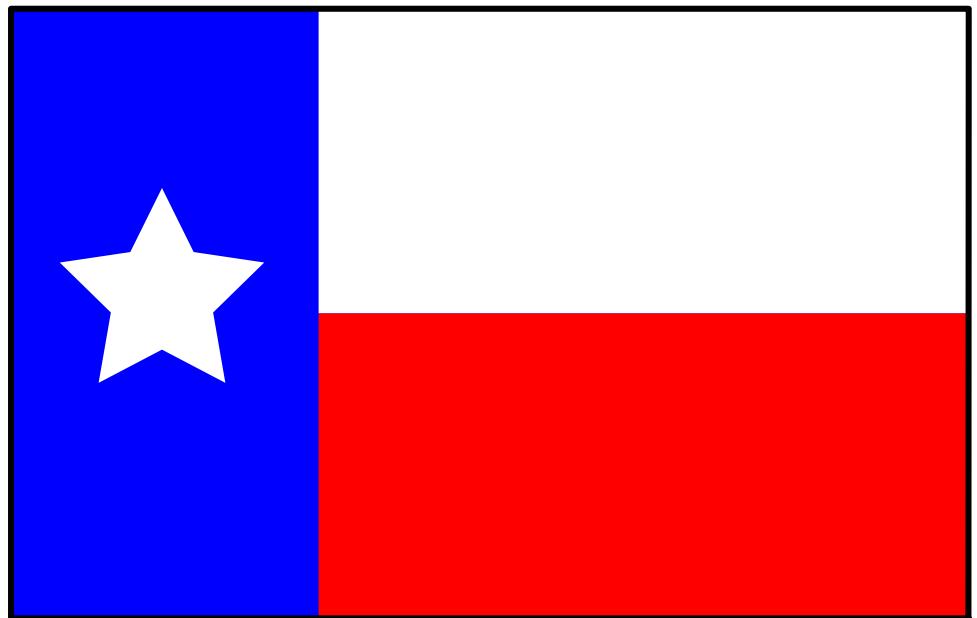


FY05 as of July 2004

Camp Bullis

Installation Action Plan

30% post-consumer material paper



Camp Bullis Installation Action Plan

Table of Contents

Table of Contents

Statement of Purpose

Contributors

Acronyms & Abbreviations

SUMMARY

Installation Action Plan Summary	1
--	---

INSTALLATION INFORMATION AND DESCRIPTION

Installation Information	1
------------------------------------	---

Installation Description	2
------------------------------------	---

CONTAMINATION ASSESSMENT

Contamination Assessment Overview	1
---	---

Previous IRP Studies	2
--------------------------------	---

SITE DESCRIPTIONS

ER,A Eligible Active Sites	1
--------------------------------------	---

Landfill 8 (Site 08)	2
--------------------------------	---

Military Munition Response Program Sites	4
--	---

CBULL-001-R-01 Stokes Mortars Munition Site	5
---	---

CBULL-002-R-01 8 Target Range	5
---	---

CBULL-003-R-01 100 Target Range	5
---	---

CBULL-004-R-01 75MM Munitions Site	5
--	---

Compliance Cleanup Sites	6
------------------------------------	---

All Landfill except Landfill 8	7
--	---

OB/OD Site	7
----------------------	---

ER,A Eligible Response Complete Sites	8
---	---

Sewage Treatment Area (Site 13)	9
---	---

Camp Bullis Landfills (Site 17).	9
--	---

Landfill 1	10
----------------------	----

Landfill 10	10
-----------------------	----

Landfill 12	11
-----------------------	----

Landfill 13	11
-----------------------	----

Non-ER,A Eligible Response Complete AEDB-R Sites	12
--	----

Range Impact Area (Site 14)	13
---------------------------------------	----

Camp Bullis Motor Pool (Site-15)	13
--	----

Texas Army National Guard Motor Pool (Site-16)	14
--	----

Other Sites	15
-----------------------	----

Hunting Headquarters Storage Area	16
---	----

SCHEDULE

Past Milestones	1
---------------------------	---

No Further Action Sites	3
-----------------------------------	---

Schedule Chart	4
--------------------------	---

Table of Contents

REMEDIATION ACTIVITIES

REM/IRP/RA Assessment 1

COMMUNITY INVOLVEMENT

Restoration Advisory Board Status 1

Statement of Purpose

The purpose of the Installation Action Plan is to outline the total multi-year restoration program for an installation. The plan will define Installation Restoration Program requirements and propose a comprehensive approach and associated costs to conduct future investigations and remedial actions at each Installation Restoration Program site at the installation.

In an effort to coordinate planning information between the Installation Restoration Program manager, major army commands, installations, executing agencies, regulatory agencies, and the public, an Installation Action Plan has been completed for Camp Bullis. The Installation Action Plan is used to track requirements, schedules, and budgets for all major Army installation restoration programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is therefore subject to change. Camp Bullis is expected to have RIP in FY10.

The following agencies contributed to the formulation and completion of this Installation Action Plan:

Engineering & Environment, Inc.

Fort Sam Houston/Camp Bullis

IMA-SWRO

MWH

Shaw Environment

TCED

TCEQ

USAEC

USACE- Tulsa

Weston Solutions

Acronyms & Abbreviations

ACAD	Academy of Health Sciences
AEDB-R	Army Environmental Database - Restoration
AMEDDC&S	U.S. Army Medical Department Center and School
APAR	Affected Property Assessment Report
BAMC	Brooke Army Medical Center
CAIS	Chemical Agent Identification Sets
CB	Camp Bullis
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminant of Concern
CTC	Cost-to-Complete
DERA	Defense Environmental Restoration Act
DMSET	Deployable Medical Systems Equipment and Training
DOD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
DSERTS	Defense Site Environmental Restoration Tracking System (now AEDB-R)
EOD	Explosive Ordnance Disposal
EPA	Environmental Protection Agency
ER,A	Environmental Restoration, Army
FAA	Federal Aviation Administration
FM	Farm-to-Market
FY	Fiscal Year
GW	groundwater
HQ	Headquarters
HW	Hazardous Waste
IAAFA	Inter-American Air Force Academy
IAP	Installation Action Plan
IERA	Institute of Environmental Safety and Occupational Health Risk
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ITAM	Integrated Training Area Management
K	Thousand
LAR	Landfill Assessment Report
LTM	Long-term Monitoring
MCL	Maximum Contaminant Level
MEDCOM	U.S. Army Medical Command
mm	Millimeter
MW	Monitoring Well
NPL	National Priorities List
NE	Not Evaluated
NEPA	National Environmental Protection Act
NOE	Notice of Enforcement
NOR	Notice of Registration
NOV	Notice of Violation
NPDES	National Pollution Discharge Elimination System
OB	Open Burn
OD	Open Detonation
O&M	Operation & Maintenance
OWS	Oil Water Separator
PA	Preliminary Assessment
PCA	1,1,2,2- tetrachloroethene

Acronyms & Abbreviations

PCE	tetrachloroethene
PCL	Protective Concentration Level
PMZ	Plume Management Zone
POL	Petroleum, Oil and Lubricants
PWBC	Public Works Business Center
RA	Remedial Action
RA (C)	Remedial Action – Construction
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
SVE	Soil Vapor Extraction
SVOCs	Semi Volatile Organics
sw	surface water
SWMU	Solid Waste Management Unit
TANG	Texas Army National Guard
TCE	Trichloroethylene
TCEQ	Texas Commission on Environmental Quality (formerly TNRCC)
TNRCC	Texas Natural Resource Conservation Commission (now TCEQ)
TWC	Texas Water Commission
TWQ	Texas Water Quality
ug/L	Micrograms per Liter
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine (former USAEHA)
USAEC	United States Army Environmental Center
USAEHA	United States Army Environmental Hygiene Agency (now USACHPPM)
VOCs	Volatile Organic Compounds
VSI	Visual Site Inspection
WWTP	Wastewater Treatment Plant

STATUS:	Non-National Priorities List (NPL). RCRA Corrective Action as required by Part B Hazardous Waste Permit Application was submitted on 25 October 1988 and modified on 15 October 1993, on 1 May 1995, and again on 26 October 1995. The Hazardous Waste Permit No. HW-50335 was issued 7 November 1997.		
# OF AEDB-R SITES:	6		
ACTIVE SITES:	1 - Site 8- Landfill 8		
RESPONSE COMPLETE:	2 - Site 13 and Site 17		
NON-ER,A ELIGIBLE SITES:	3 - Site 14, 15, 16		
OTHER SITES not in AEDB-R:	1 - Hunting Headquarters Storage Area		
MUNITION RULE SITES	4		
DIFFERENT SITE TYPES:	2 Landfills	1 Waste Treatment Plant	
	1 Unexploded Munitions	1 Oil Water Separator	
	1 Surface Impoundment/Lagoon		
CONTAMINANTS OF CONCERN:	VOCs, Metals, SVOCs, POL, Chemical Agents, Explosives		
MEDIA OF CONCERN:	Soil, Surface Water, Groundwater		
COMPLETED REM/IRA/RA:	None		
CURRENT IRP PHASES:	RI at 1 site- Site 8		
PROJECTED IRP PHASES:	RI, IRA, RD/RA, RA(O) and LTM - Site 8		
IDENTIFIED POSSIBLE REM/IRA/RA:	Site 8		
DURATION:	Year of IRP Inception:	1999	
	Year of IRP Completion excluding LTM/LTO:	2010	
	Year of IRP Completion including LTM/LTO:	2032	

Installation Information

SITE DESCRIPTION:

Camp Bullis (CB) is located on 27,880 acres of land primarily in Bexar County, Texas. It is situated approximately 19 miles northwest of downtown San Antonio, Texas and Fort Sam Houston.

IRP EXECUTING AGENCIES:

Investigation Phase Executing Agency: U.S. Army Garrison, Fort Sam Houston, Texas
Remedial Design/Action Phase Executing Agency: U.S. Army Corps of Engineers; Tulsa District, Seattle District, and Huntsville Center
LTM: Institute of Environmental Safety and Occupational Health Risk (IERA)

REGULATORY PARTICIPATION:

FEDERAL: U.S. Environmental Protection Agency, Region VI and U.S. Fish and Wildlife Service
STATE: Texas Commission on Environmental Quality (TCEQ)

REGULATORY STATUS:

- Non-NPL with RCRA Corrective Action
- RCRA Hazardous Waste Part B Permit, November 1997
- Class 2 Permit Modification issued and revised Detection Monitoring System at OB/OD Area, August 2000
- Notice of Violation packages (NOV) since the RCRA Part B Permit was issued in November 1997– 2 (1998 and 2001)
- Notice of Enforcement (NOE) – 1 (4 May 1999)
- Interagency Agreements – None
- Federal Facility Agreements – None
- National Pollutant Discharge Elimination System (NPDES) Permit No. TX-0031224, early 1980
- TNRCC water quality permit, Texas Water Quality (TWQ) Permit No. WQ0012080-001, May 1997
- Compliance Plan Application submitted September 1999 (modification to Part B Permit)
- Received Draft Compliance Plan prepared by TNRCC (now call TCEQ) on 18 August 2000
- Submitted comments to TNRCC (now call TCEQ) on the Draft Compliance Plan – 2001
- Approval of Final Safety Submission by Department of Defense Explosive Safety Board January 2002
- Submitted comments to TCEQ on 2nd version of the Draft Compliance Plan in Fall 2002

MAJOR CHANGES TO IAP FROM PREVIOUS YEAR:

None

Installation Description

LOCATION:	<p>Camp Bullis encompasses 27,880 acres of land primarily in Bexar County, Texas. It is located approximately 19 miles northwest of downtown San Antonio, Texas and Fort Sam Houston. The reservation is situated east of Interstate Highway 10, west of U.S. Highway 281, and north of Loop 1604. Camp Bullis is oriented north-south, spanning approximately 10 miles in the north-south direction and four miles in the east-west direction. The facility can be accessed from Camp Bullis Road east of I-10, from Farm-to-Market (FM) Road 1535 (Northwest Military Drive) north of Loop 1604, and from FM2696 (Blanco Road), also north of Loop 1604. The geographic coordinates of the facility are 29 degrees 40 minutes 30 seconds latitude and 98 degrees 33 minutes 10 seconds Longitude.</p>
HISTORY:	<p>Camp Bullis is an active U.S. Army facility and is not on any proposed closure list. Camp Bullis was first established as the Leon Springs Military Reservation in 1906 for use as a military training facility.</p> <p>The installation currently serves as the field training facility in support of all military activities in the south Texas area. These activities include, but are not limited to, weapons training, field training, maneuvers, camp and compass courses, and parachute operations. Major users of the installation are the Academy of Health Sciences, Brooke Army Medical Center, U.S. Air Force Academy of Health Sciences, 343rd Training Squadron, E Company Academy BN, DHO/SIMM Center, U.S. Army Deployable Medical Systems Equipment for Training (DMSET), HQs 1/141st Texas National Guard, 6th Military Intelligence, DMRTI, 95th RSC, U.S. Air Force Air Training Command, the Texas National Guard, and Southwest Research Institute. Camp Bullis also houses an Explosives Ordnance Disposal Range that is utilized by various organizations to explode ordnance found throughout south central Texas and elsewhere. Portions of Camp Bullis are also used for recreational purposes. Seasonal hunting, shooting and youth adventure sporting are among the featured recreations at Camp Bullis.</p> <p>The lead regulatory agency for Camp Bullis is the Texas Commission on Environmental Quality (TCEQ), which represents the state and the EPA when conducting inspections and administering NOV's.</p>
MISSION:	<p>The mission of Camp Bullis is to provide ranges, training areas, air space, and facilities to support federal, state, and local government activities. Camp Bullis serves as the field training installation in support of military activities including Army, Air Force, Navy, Marine Corps, and Army Reserve units stationed in and around the San Antonio and South Texas area. The facility has been active since 1906 when it was known as Camp Funston and designated as the Leon Springs Military Reservation. The major users of Camp Bullis include: Academy of Health Sciences (ACAD) and Joint Medical Readiness Training Center (part of the U.S. Army Medical Department Center and School [AMEDDC&S]); U.S. Army Deployable Medical Systems Equipment for Training (DMSET); Brooke Army Medical Center (BAMC); 5th U.S. Army 6th Military Intelligence Battalion; Inter-American Air Force Academy (IAAFA); U.S. Air Force Air Education and Training Command; U.S. Air Force Ground Combat Skills Training; Texas Army National Guard; Federal Aviation Administration (FAA); 343rd Training Squadron; E Company Academy BN; DHO/SIMM Center; SWARISC; Headquarters 1/141st Texas National Guard; DMRTI; 95th RSC; and Southwest Research Institute.</p> <p>The Public Works Business Center (PWBC) provides general maintenance services for the Camp Bullis reservation. The Environmental and Natural Resources office operates at the reservation under the Southwest Regional Office. The Integrated Training Area Management (ITAM) program also operates at the reservation under the administration of Headquarters,</p>

Installation Description

MISSION (cont):

Camp Bullis, and is responsible for coordinating natural resource conservation management and training maneuvers. In keeping with the Camp Bullis mission, the facility operates an Explosive Ordnance Disposal (EOD) Range for the treatment of waste ordnance. The San Antonio Police Department also detonates explosives at EOD Range for both emergency disposal and training purposes. The OB/OD Area is the RCRA-permitted unit located within the EOD Range. Other activities at the installation include weapons training, field training, maneuvers at the Camp Bullis map and compass courses, parachute training, and combat assault landing. To accommodate these activities and to provide personnel and logistical support, numerous facilities are located throughout the installation. Additionally, Camp Bullis provides recreational opportunities for active and retired military personnel. The Boy Scouts of America also used the training areas of Camp Bullis for mountaineering, land navigation training, and camping.

Contamination Assessment

Camp Bullis was originally issued a RCRA Part B Permit HW-50335 on November 7, 1997. The Open Burn/Open Detonation unit is the only regulated unit specified in the permit authorized for the management of hazardous waste. Permit Section VII, Corrective Action for Solid Waste Management Units, identifies all sites requiring investigation and include an open burn/open detonation area, drainage system and oil water separator, motor pool, drum storage area, and landfills.

The Drainage System and Oil Water Separator and TANG Motor Pool investigations are complete with no further action required. A soil investigation was performed at the Hunting Headquarters Storage Area. No reported constituents were detected above Texas Risk Reduction Program (TRRP) residential assessment levels. An Affected Property Assessment Report with a no further action recommendation for the Hunting Headquarters Storage Area was submitted to Texas Commission of Environmental Quality (TCEQ) and is pending review and approval.

The Open Burn/Open Detonation Area is the only regulated unit at Camp Bullis. Detection monitoring results indicated a statistically significant increase of contamination for volatile organics (acetone, benzene, carbon disulfide), explosives (HMX, RDX, and nitrobenzene), and barium. In accordance with the permit requirements, Appendix IX groundwater sampling was performed and the results indicated the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, explosives, dioxins/furans, perchlorate, and sulfide. Soil characterization will not be performed until the OB/OD is considered inactive.

Inactive landfills are designated as Site-17 (Landfills 1, 10, 12A, 12B, 12C, 13A, and 13B) and Site-08 (Landfill 8). Contaminants of potential concern for Site-17 soils are metal constituents. Additional soil characterization is recommended for Landfills 10, 12, and 13. No release to groundwater has occurred based on sampling the existing monitoring well network. Evaluation of sediment contamination to Salado Creek in the vicinity of LF 12 and LF 13, as required by TCEQ, has not yet been performed.

Site-08 characterization has primarily focused on groundwater and surface water exposure pathways, since site access is restricted within the landfill boundary. Although soil samples have not been obtained for analyses, a non-intrusive soil gas survey was performed. The soil gas survey indicated chlorinated volatile organics (primarily trichloroethene [TCE] and tetrachloroethene [PCE]) flux emanating from the surface within the landfill boundary. The primary contaminant of concern in groundwater is TCE, detected at a maximum concentration of 194 µg/l, exceeding the MCL of 5 µg/l. Additional chlorinated VOCs were also detected including vinyl chloride, PCE, and 1,1,2,2, tetrachloroethene [PCA]. Surface water contamination detected at Lewis Creek (surface water and groundwater hydraulically connected) also includes chlorinated VOCs. Off-site water supply wells located within 500 feet of Camp Bullis boundary were sampled due to TCEQ concerns associated with the release at Site-08. The results indicated no chlorinated VOCs were detected in the off-site wells similar to those detected at Camp Bullis.

Previous Studies

Title	Author	Date
Chemical, Biological, and Radiological Decontamination	TM 3-220	1967
Geologic Study, Fort Sam Houston and Camp Bullis, San Antonio, Texas	U.S. Army	1985
Hydrogeology of the Camp Bullis Area	Waterreus	1992
RCRA Facility Assessment	PRC	1993
Baseline Assessment Explosive Ordnance Disposal Range, Camp Bullis Military Reservation San Antonio, Texas	EA	1995
Camp Bullis Motor Pool Oil/Water Separator Assessment	EA	1995
Groundwater Monitoring Results Fourth Quarter Report Volume I	Earth Technology, Inc. (ET)	1997
Groundwater Monitoring Results First Sampling Event 1998 Report	ET	1998
Camp Bullis OB/OD Groundwater Contaminants at the EOD Range Camp Bullis, Bexar County, Texas	Veni	1999
Camp Bullis OB/OD Permit Requirements and Addendum (OB/OD Area Detection Monitoring) Report	GMI	1999
Camp Bullis OB/OD Permit Requirements, Supplemental Report	GMI	1999
Potential for Contaminant Movement into the Edwards Aquifer from the Site 8 Landfill, Camp Bullis, Texas	George Veni & Associates (Veni)	1999
1999 Annual Report OB/OD Monitoring	USACE	2000
Groundwater Monitoring Report January 2000 Sampling Event OB/OD	USACE	2000
Groundwater Monitoring Report July 2000 Sampling Event OB/OD	USACE	2000
Revised Addendum RCRA Facility Investigation Report for the TANG Motor Pool	RF Weston	2000
2000 Annual Report OB/OD Monitoring	USACE	2001
Groundwater Monitoring Report November 2000 Sampling Event	USACE	2001
Fort Sam Houston and Camp Bullis Landfill Assessment Report (LAR)	EA	1995a
Assessment and Declassification of Ten Suspect Landfills at Camp Bullis	EA	1995b
Site 8 Groundwater Characterization Phase I Report	Montgomery Watson (MW)	1997a
Addendum to the Final Site 8 Groundwater Characterization Phase I Report	MW	1997b
Final Phase III Groundwater Characterization Report for Site 8	MW	1997c
RFI Report for the Drainage System and Oil/Water Separator and Hunting Headquarters Storage Area U. S. Army Camp Bullis, Texas	GeoMarine Inc. (GMI)	1999a
RCRA RFI for the OB/OD Area and the TANG Motor Pool U.S. Army Camp Bullis, Texas	GMI	1999b
Texas Natural Resources Conservation Commission Compliance Plan Application for U.S. Army Camp Bullis, Texas	GMI	1999c
Final Off-Installation Well Identification and Sampling Program – March 2002	Montgomery Watson Harza (MWH)	2002a
Final Fourth Interim Data Evaluation Report for Site 8 – May 2002	MWH	2002b
Records Search for Historic Wells and Identification of Potential Disposal Sites, Camp Bullis, Texas – November 2002	MWH	2002c

Camp Bullis

ER,A ACTIVE SITES

SITE 8, SWMU 10

LANDFILL 8 (PAGE 1 OF 2)

SITE DESCRIPTION

This site is located in the central area of Camp Bullis. Landfill 8 (SWMU 10) is cut in half by Lewis Valley Road. Cunningham Hill is located to the southwest. A karst (high fractured limestone) aquifer underlies the landfill, which considerably complicates the groundwater investigation. The areal extent of the landfill is ~6 acres. The site was an active dump site during the early 1950s. However, by Feb 1954, the site was well vegetated.

During the Landfill Assessment in 1994, partially destroyed chemical agent identification sets (CAIS) were discovered. Subsequent investigations outside the landfill identified the presence of GW contamination, primarily TCE (source unknown) and other related VOCs. TCEQ required a Compliance Plan application for Landfill 8 in response to a reported release of hazardous constituents to GW.

From Apr 1997 until 2003, 21 GW monitoring wells have been installed. Water monitoring has been performed on a quarterly basis, until 2003 when a stage-based sampling program was implemented. Surface water and GW samples are scheduled to be collected three times yearly during high, moderate, and baseline stages. TCE, PCE, and PCA have been detected above their PCLs (MCLs) in SW and the highest detected concentration of TCE, through 8 sampling rounds, is 289 micrograms per liter (ug/L) in Lewis Creek. TCE, acetone and 2-propanol have been detected above their PCLs in GW, and the highest concentration of TCE (the primary groundwater COC), detected is 194 ug/L.

During investigations performed in Nov 2001, a grab GW sample was collected from an open borehole ~5 ft deep. TCE was detected at 3,380 ug/L. None of the stream sediment samples collected to date have COCs above their respective PCLs. A passive, non-intrusive soil gas survey within the Site 8 fenced area was initiated in Aug 2001. TCE and PCE were detected from the surface, however the results were inconclusive because of a rain event during the field work. In Jul 2001, TCEQ directed off-site sampling of private water supply wells downgradient of Site 8 for VOCs. This task was completed by Oct 2001 and no COCs were detected in the 16 off-site wells that were sampled.

A tracer survey began in Jan 2002 and flow rates ranging from 300 to 800 meters/day were calculated. Installation of a radiotelemetry system began in Jan 2003. This system allows for remote monitoring of water quality parameters so that water samples can be collected at critical times from the karst aquifer underlying Site 8. A Tier 1 Ecological Exclusion Criteria Checklist was prepared in Feb 2003, and based on this work, a more detailed site specific ecological risk assessment will be completed (Tier 2 or 3 ERA).

Groundwater beneath the landfill discharges into Lewis Valley Creek, which is a tributary of Salado Creek. During periods of high flow, Salado Creek recharges the Edwards Aquifer. There is a likely groundwater connection to the Edwards Aquifer, which is the sole source aquifer for the San Antonio area.

STATUS

RRSE RATING: High

CONTAMINANTS OF CONCERN:

Lead, Chemical Warfare Agents, TCE, PCE, PCA, Acetone/2-propanol

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RI/FS

FUTURE IRP PHASE:

RI/FS, IRA, RD/RA, RA(O), LTM

PROPOSED PLAN

The Army plans to evaluate the vertical and horizontal extent of the contamination and possible connection to the Edwards Aquifer. The Army will perform stage-based investigations of the surface and groundwater, additional groundwater tracer work, geophysical investigations downgradient of Site 8 to evaluate the direction/magnitude of gw flow and interval-specific sampling to evaluate vertical extent of COCs, evaluation of the size and location of the VOCs source detected in Landfill 8 through a passive soil gas investigation, off-site (private wells) groundwater sampling, initial ecological risk assessment activities to satisfy Tier 2 or 3 requirements, and possibly installation of deep Westbay-type (multiple depth sampling) wells at the Post's southern boundary.

Institutional controls such as fencing are likely. Landfill surface inspections will continue, especially after major rainfall. Monitoring will continue.

Possible additional actions may include surface water diversion and/or soil cover (on the west side) with grading to reduce infiltration into the landfill. Horizontal SVE may be used to address the source material in the bedrock matrix. Other options, such as in-well treatment for TCE or hydraulic control of the plume, may be needed.

Camp Bullis

MMRP SITES

CBULL-001-R-01 STOKES MORTARS MUNITIONS SITE

This 101.49 acre area located near Training Area 8 was found to contain several 3-inch Stokes mortars, 2.36-inch high explosive anti-tank rockets and 37 mm rounds. These rounds were found during routine work in the area such as grading, land clearing, mowing and trenching. Specific quantities of ordnance items recovered from this area were not documented in the available records. A review of historic records and maps did not provide an indication that this area had been a designated range or impact area. The area is currently the location of Building 6215, Outdoor Recreation Headquarters, a recreational vehicle parking area and a baseball field.

CBULL-002-R-01 8 TARGET RANGE

The target butts and firing positions for the 8 Target Range, as they existed from 1919-1920 are depicted on a base map, dated 1921. Except for the 1000-yard firing position, all were located north of Salado Creek and Wilderness Trail Road, in the area of the current active small arms range. A 1925 map identifies this range as the MG Range. A 1932 map identifies the range as a Machine Gun Range. The range is no longer depicted on a 1939 map. The 7.44 acres estimated for the former 1000-yard firing position are being classified as a closed range for the Phase 3 inventory. this area is currently undeveloped. No information on specific ordnance types used or UXO responses at this range was located during the records review.

CBULL-003-R-01 100 TARGET RANGE

The target butts and firing positions for the 100 Target Range, as they existed from 1919-1920 are depicted on a base map, dated 1921. Except for the 500-yard and 600-yard firing positions, all were located north of Salado Creek and Wilderness Trail Road, in the area of the current active small arms range. Based on a 1932 map, the 100 Target Range and another adjacent small arms range were replaced by 5 new ranges adjacent to one another: 200 yards, 200 yards, 300 yards, 500 yards and 600 yards, all of which were located within the current active range area. The 7.95 acres estimated as the former 500- and 600-yard firing positions are being classified as a closed range for the Phase 3 inventory. This area is currently used for sewage oxidation ponds. No information on specific ordnance types used or UXO responses at this range was located during the records review.

CBULL-004-R-01 75 MM MUNITIONS SITE

Several live 75mm rounds were removed from a pit formerly located near Building 6104 in the Motor Pool within the Main Cantonment area. The ordnance was unearthed by a backhoe operator who was digging a drainage channel. At least five complete rounds, i.e. unfired projectile and propellant filled-case, were retrieved from the ditch line. This area is estimated to be less than 1 acre in size, and is currently an unimproved parking area.

Camp Bullis

COMPLIANCE CLEANUP SITES

OMA ALL LANDFILLS EXCEPT SITE 8

No description available at) this time.

OMA OB/OD

The Camp Bullis OB/OD permit required Camp Bullis to perform a RFI of all solid waste management units listed in the permit. A schedule for completion of the RFI was submitted to and approved by the state regulatory agency (TNRCC). The RFIs were completed in accordance with the schedule and submitted to TNRCC. Currently the OB/OD is considered an active site and all activities are being programmed as per the requirements of the permit, compliance plan and any subsequent permit modifications, to included groundwater monitoring.

Out year funding is anticipated for additional monitoring of 30+ wells and 10 new well installation.

The final phase of investigation was funded in FY03. This will involve some debris removal, groundwater monitoring at 15 wells and closure report preparation. FY05 funds may drop off if current effort is successful.

**Camp Bullis
ER,A RESPONSE
COMPLETE SITES**

SITE 13 SEWAGE TREATMENT PLANT

SITE DESCRIPTION

This site is located in the southeastern corner of the cantonment area. The Wastewater Treatment Plant (WWTP) receives all of the facility's sanitary sewage, the wastewater generated by the various tenant activities, and the discharge from the Drainage System and OWS. Camp Bullis was permitted under National Pollutant Discharge Elimination System (NPDES) Permit No. TX-0031224 to discharge treated wastewater effluent to Salado Creek in the early 1980s.

The WTP was later expanded to meet NPDES permit requirements. Subsequent to the expansion of the WTP and modification of the NPDES permit for a land disposal system, wastewater was treated in three oxidation ponds and the effluent was disposed of as irrigation water on a firing range located to the north of the ponds. The wastewater treatment facility was replaced in 1997 and an upgraded activated sludge plant system added. A trickling filter still remains, however the piping system has been removed.

Sludge samples were collected from the treatment plant. Results revealed no contamination, therefore no further action is planned under the IRP.

STATUS

RRSE RATING: Not Evaluated

CONTAMINANTS OF CONCERN:

Heavy Metals

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC - 1997

SITE 17 (PAGE 1 OF 5) CAMP BULLIS LANDFILLS

SITE DESCRIPTION

The RCRA facility assessment suspected 17 inactive landfills at Camp Bullis. These 17 areas were divided into two categories, declassified landfills and landfills. The nine declassified landfills (those identified from previous investigations as not containing industrial solid waste) are 2, 3, 4, 5, 7A, 7B, 9, 11 and 14. The RCRA Facility Investigation Report for SWMU No. 10 Landfills, Dec 1999, described 17 suspected inactive landfills and made the recommendation that the declassification (Assessment and Declassification of Ten Suspect Landfills at Camp Bullis and Fort Sam Houston, EA 1995) of these landfills be upheld. TNRCC issued a letter dated April 17, 2000 accepting with exception the recommendations of the report. The declassification of the landfills was not among the exceptions noted by TNRCC.

Landfill 8 was separated from this AEDB-R site, and renamed as AEDB-R Site 8.

STATUS

RRSE RATING: NE

CONTAMINANTS OF CONCERN:

Asbestos, Chemical Agents, TCE

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC - 1994

SITE 17 (PAGE 2 OF 5) LANDFILL 1

SITE DESCRIPTION

This landfill is located in the southwestern area of Camp Bullis. The landfill is bounded to the north by a fence line with Sewell Pond approximately 400 yards away, to the east by Marne Road, to the south by the baseball diamond and Bullis Road, and to the west by Salado Creek. Landfill 1 (SWMU-10) is approximately 8 acres in size. This site was considered the primary landfill at Camp Bullis while it was active, from pre-1954 until its closure in 1976. Debris found at this site includes everything generated at the installation, from old rounds, trash, paint and possibly insecticides to domestic debris.

Soil and groundwater were investigated as part of the Landfill Assessment Report in 1994 and 1995. Groundwater was sampled quarterly beginning in May 1996. No analytes in the groundwater were found to be above background levels. Surface soil samples showed the constituents of concern to be various metals. Limited additional investigation was performed November 2001; no significant contamination was detected.

STATUS

RRSE RATING: NE

CONTAMINANTS OF CONCERN:

Metals

MEDIA OF CONCERN:

Soil, Surface Water

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC

SITE 17 (PAGE 3 OF 5) LANDFILL 10

SITE DESCRIPTION

This site is located in the southwestern area of Camp Bullis. To the north, approximately 600 yards, is Breise Hill, approximately 800 yards to the east is the motor pool, to the south, approximately 200 yards, is Goetz Hill, and to the west, approximately 300 yards, is the Camp Bullis boundary. The areal extent of the landfill is approximately 2 acres. This site was active during the 1970s. The type of debris encountered was domestic waste, mostly metal items such as bookshelves, easels, and tin cans.

Monitoring wells were installed around the landfill and were sampled quarterly from May 1996 to 1999. No significant contamination was detected in the groundwater.

The presence of the Golden-Cheeked Warbler (endangered bird) habitat next to this site will complicate any action.

STATUS

RRSE RATING: NE

CONTAMINANTS OF CONCERN:

Metals

MEDIA OF CONCERN:

Soil, Surface Water

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC

SITE 17 (PAGE 4 OF 5) LANDFILL 12

SITE DESCRIPTION

This site is located in the southwestern areas of Camp Bullis. The landfill rests on the northern slope of Goetz Hill and is bounded to the north by Second Division Hill, to the east by the Camp Bullis motor pool, to the south by Goetz Hill, and to the west by the Camp Bullis boundary. The areal extent of the landfill is approximately 3 acres. The landfill is composed of 3 sections (Landfill A, B, and C). These sites were active during the 1920s through the early 1940s and contained broken china, incinerator ash, telephone poles (cut up), electrical switch boxes, bricks, melted bottles, old truck parts and rusted cans.

A landfill investigation was conducted in 1994 and 1995. As part of this investigation, test pits were dug and monitoring wells were installed. Groundwater was sampled quarterly from May 1996 to 1999. No significant contamination was detected in the groundwater.

The presence of the Golden-Cheeked Warbler (endangered bird) habitat next to this site will complicate any action.

STATUS

RRSE RATING: NE

CONTAMINANTS OF CONCERN:

Metals

MEDIA OF CONCERN:

Soil, Surface Water

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC

SITE 17 (PAGE 5 OF 5) LANDFILL 13

SITE DESCRIPTION

This site is located in the southwestern area of Camp Bullis. To the north is the Camp Bullis Cantonment Area, to the east is Military Highway, to the south is the munitions storage area, Camp Bullis boundary and to the west, Laurin Hill. This site used debris to dam a stream channel of an unnamed creek. This unnamed creek flows into Salado Creek. The areal extent of the landfill is approximately 3 acres within the nesting area of an endangered species (Golden-Cheeked Warbler). The landfill was active during the early 1900s to the late 1930s. The site has been split into two sections. Section A contains the original incinerator used on post. Section B is believed to be the oldest landfill on post. The type of debris in both areas consisted of broken china, incinerator ash, spent rounds (75mm), bricks, melted bottles, old wagon parts and rusted cans.

Groundwater was sampled quarterly from May 1996 to 1999. No significant contamination was detected in the groundwater.

During the TNRCC Compliance Evaluation Inspection on 19 February 1997, disturbed waste was observed along a stream channel adjacent to the landfill. TNRCC recommended stabilization measures. Camp Bullis completed the Interim Remedial Action in 1999 using gabion baskets for erosion control.

STATUS

RRSE RATING: NE

CONTAMINANTS OF CONCERN:

Metals

MEDIA OF CONCERN:

Soil, Surface Water

COMPLETED IRP PHASE:

PA/SI, IRA (C)

CURRENT IRP PHASE:

RC

Camp Bullis
NON-ER, A ELIGIBLE RESPONSE
COMPLETE SITES

SITE 14 RANGE IMPACT AREA

SITE DESCRIPTION

This site is located north of the Sewage Treatment Area along Wilderness Trail. Currently, this site is used as a firing training area by DOD units, as well as other federal, state, and local organizations.

This site is currently active, therefore it is not eligible for ER,A funding.

STATUS

RRSE RATING: Not Evaluated

CONTAMINANTS OF CONCERN:

Lead, Heavy Metals

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

Response Complete - 1989

SITE 15 CAMP BULLIS MOTOR POOL

SITE DESCRIPTION

This site is located in the Cantonment Area on the corner of Bullis Road and Military Highway. This site is currently used as a maintenance facility, for POL activities, by the Directorate of Logistics.

This site is currently active, therefore it is not eligible for ER,A funding.

STATUS

RRSE RATING: Not Evaluated

CONTAMINANTS OF CONCERN:

POL, Lead

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

Response Complete - 1989

SITE 16

TEXAS NATIONAL GUARD MOTOR POOL

SITE DESCRIPTION

This site is located in the southern portion of Camp Bullis within a fenced area west of Northwest Military Highway and south of Bullis Road. This site consists of a maintenance building with maintenance bays used to service and repair Texas Army National Guard (TANG) motor pool vehicles.

The following materials used at the site containing hazardous waste or hazardous constituents include fuel (diesel), solvents, and other products or spent material associated with vehicle repair and maintenance (e.g., parts cleaning).

As part of the Interim Corrective Measure, a retaining wall and other flood control improvements were made in 1999.

Additional investigation activities were required by TNRCC. The investigation work was completed and an addendum was submitted in December 2000.

This site is currently active, therefore it is not eligible for ER,A funding.

STATUS

RRSE RATING: Not Evaluated

CONTAMINANTS OF CONCERN:

Lead, POL

MEDIA OF CONCERN:

Soil, Surface water

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

Response Complete - 1989

Camp Bullis

OTHER SITES

SWMU 7 HUNTING HEADQUARTERS STORAGE AREA

SITE DESCRIPTION

This site is located north of the Cantonment Area. The Hunting Headquarters Storage Area (SWMU-7) was used as the central point of coordination for hunting activities. Military personnel have used the land at Camp Bullis for hunting activities since 1955. Public participation has been allowed since 1957.

As reported in the RFA, the TNRCC identified unlabeled drums as being stored at the Hunting Headquarters during an October 1991 investigation. The TNRCC issued a Notice of Violation (NOV) to Camp Bullis following the investigation. The U.S. Army was instructed to prepare an inventory list of drums, drum contents, a classification as to waste of product, and disposition of wastes or proposed use of products.

As part of the Interim Corrective Measure, all drums stored at the site were removed. No evidence of a release was observed during the TNRCC site inspection conducted as part of the RFA.

Camp Bullis received the TNRCC comments requiring additional investigation and a revision to the RFI report. The additional investigation was performed in the spring 2001. A notice of intent to switch to TRRP (NOIST) was prepared and submitted to TNRCC. An Affected Property Assessment Report was submitted to TNRCC in June 2002.

STATUS

RRSE RATING: Not Evaluated

CONTAMINANTS OF CONCERN:

POL, Metals

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

COMPLETED IRP PHASE:

PA/SI, RA

CURRENT IRP PHASE:

RI

FUTURE IRP PHASE:

RI

PROPOSED PLAN

No further action is expected.

PAST MILESTONES

1981

Camp Bullis operated under NPDES Permit No TX-0031224

1988

Submitted Part B Hazardous Waste Permit Application to the Texas Water Commission (TWC)

1990

TWC requested additional information for the Part B Permit Application

1992

Drums removed from Hunting HQ Storage Area

1993

Received final RCRA Facility Assessment report
Part B Permit Application was revised

1994

Original Oil Water Separator was replaced as part of an Interim Corrective Measure
EA performing Landfill Assessment fieldwork

1995

Received final Landfill Assessment report
TNRCC issued a NOD
Part B Permit Application was revised

1996

Quarterly groundwater sampling of landfills

1997

Received Groundwater Monitoring Results Fourth Quarter Report
Site 8 Landfills PA/SI completed
Site 13 Sewage Treatment Area completed
Landfill 8- MW conducting groundwater investigation to determine if chemical warfare material was released to groundwater
TNRCC conducted Compliance Evaluation Inspection
Received TNRCC Hazardous Waste Permit No. HW-50335 and Facility Air Quality Permit No. BG0586L

1998

Received Groundwater Monitoring Results for the First Sampling Event (EarthTech, non-IRP)
Site 8 Landfills RI/FS completed
TNRCC Industrial and Hazardous Waste NOR# 69062 amended and electronically updated Site 8
TNRCC issued a NOV package

1999

Landfills RD and REM/RA completed
Landfill 8- Montgomery Watson completed initial groundwater investigation of chemical warfare materials (not detected in groundwater)
Landfill 13- Drainage improvements along streambed completed

PAST MILESTONES

OB/OD Interim Corrective Measure drainage diversion terrace constructed
MW conducted 3rd phase of monitoring well installation and groundwater sampling
Completed the following documents:
RFI for the Drainage System and Oil/Water Separator and Hunting Headquarters Storage Area
RFI for the OB/OD Area and the TANG motor pool
OB/OD Permit Requirements and Addendum (OB/OD Area Detection Monitoring) Report
OB/OD Permit Requirements, Supplemental Report
Submitted TNRCC Compliance Plan Application – (OB/OD Area and Landfill 8)

2000

OB/OD Area - The Compliance Plan Application was withdrawn for this site
OB/OD Area - Class 2 Permit Modification issued August 25
OB/OD Area – Groundwater detection monitoring system revised. 2 new wells were installed and 2 existing wells were plugged
OB/OD Area – First quarterly sampling event for revised monitoring system occurred in November, Two Class 1 Modifications were submitted in December
Landfill 8 – Site 8 the Draft Final Data Management Plan was submitted to the TNRCC in April
Landfill 8 – Received the TNRCC authority to implement RFI in May
Landfill 8 – Installed 2 new monitoring wells, conducted 2 rounds of sampling
Landfill 8 – Received initial Draft Compliance Plan prepared by TNRCC on 18 August - ongoing
Drainage System and Oil Water Separator – Updated NOR August – Response Complete
TANG Motor Pool – Additional investigations performed and RFI Addendum submitted December

2001

Landfill 8 – Revised the Final Safety Submission for Interim Stabilization Measure at Site 8 to include provisions for Intrusive Investigation
Hunting Headquarters Storage Area - Conducted additional field investigations during spring
TNRCC issued a NOV package from the August Compliance Evaluation Inspection
Submitted comments to TNRCC on the Draft Compliance Plan

2002

Approval of Final Safety Submission by Department of Defense Explosive Safety Board January
Submitted comments to TCEQ on 2nd version of the Draft Compliance Plan in Fall
Landfill 8- Conducted 3 rounds of groundwater/surface water sampling downgradient of the site

2003

TCEQ issued the Compliance Plan in May 03. FSH requested a Request for Reconsideration. Edwards Aquifer Authority (EAA) submitted a request to TCEQ for a contested case hearing. Multiple negotiating sessions were held. Both Fort Sam Houston and EAA withdrew their request. All issues have been resolved. Expect plan to be issued in Nov 03.

NO FURTHER ACTION

The following sites currently require no further action:

Sewage Treatment Area (Site-13)

Camp Bullis Landfills (Site-17)

The following sites are not ER,A eligible and require no further action at this time.

Range Impact Area (Site-14)

Camp Bullis Motor Pool (Site-15)

Texas National Guard (TANG) Motor Pool (Site-16)

Camp Bullis IAP Schedule

(Based on the Cost to Complete current funding constraints)

#	SITE NAME	PHASE	FY05	FY06	FY07	FY08	FY09	FY10+
Site 8	Landfill 8	RI/FS						
		IRA						
		RD/RA						
		RA						
		RA(O)						
		LTM						

Remediation Activities

COMPLETED REM/IRA/ RA:

IRA at Landfill 13

In 1999, Gabion baskets were constructed to stabilize the bank along the stream channel.

RA at the Drainage System and Oil Water Separator (OWS)

The RA consisted of the removal of the original OWS system, the over-excavation of soil, an investigative effort, and replacement and retrofit of the OWS and drainage system components. Construction was completed in June 1994.

RA at the Hunting Headquarters Storage Area

The RA consisted of the identification of unlabeled drum stored at the site. The U.S. Army prepared an inventoried list of drums, drum contents, classification of the waste product, and disposition of waste or proposed use of the products. In 1992, all drums were removed. Drums containing oil and diesel fuel were sent to a recycling facility. The drums containing kerosene were burned in the Hunting Headquarters heaters and all others were disposed of via the DRMO.

IRA at the Open Burning/Open Detonation Area

In June 1999, a diversion terrace was constructed to divert rainwater run-off from the hill behind the area, reducing the potential for soil, surface water, and groundwater contamination.

CURRENT REM/IRA/RA:

None

FUTURE REM/IRA/RA:

IRA/RA at Landfill 8

Surface water diversion, in-well treatment, SVE

Community Involvement

RESTORATION ADVISORY BOARD (RAB) STATUS

A RAB does not exist at Camp Bullis.

The San Antonio community has been notified through newspaper announcements during the RCRA Part B Permit application and the Compliance Plan application process.

A core group has been established and will meet quarterly. The group consists of FSH/CB staff, Corps of Engineers (Tulsa District), Edwards Aquifer Authority, Texas Commission on Environmental Quality.

FY05
as of July 04

Camp Bullis
Installation Action Plan

FY05
as of July 04

Camp Bullis
Installation Action Plan

FY05
as of July 04

Camp Bullis
Installation Action Plan

FY05
as of July 04

Camp Bullis
Installation Action Plan

FY05
as of July 04

Camp Bullis
Installation Action Plan

FY05
as of July 04

Camp Bullis
Installation Action Plan

FY05
as of July 04

Camp Bullis
Installation Action Plan